



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/709,794	11/10/2000	Wen-Shi Huang	39088/205	4359

826 7590 06/10/2003

ALSTON & BIRD LLP
BANK OF AMERICA PLAZA
101 SOUTH TRYON STREET, SUITE 4000
CHARLOTTE, NC 28280-4000

EXAMINER

TAMAI, KARL I

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

09/709,794

Applicant(s)

HUANG ET AL.

Examiner

Tamai IE Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 12, 13, 16, 19 and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) 29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12, 13, 16, 19 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 03 April 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Newly submitted claim 29 and 30 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The newly submitted claims are combination/subcombination claims where the particulars of the combination, such as, for example the repulsive magnetic fields and the plurality of magnetic rings are not included in the combination. The Applicant's newly submitted claims are therefore directed to a different invention which may operate in a different manner such as attractive magnetic fields or magnets that are not rings.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 29 and 30 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second magnetic ring connected to the base (from claim 1) must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The rejection of Claim 19 under 35 U.S.C. 112, second paragraph, is withdrawn.

Claim Rejections - 35 USC § 102

4. The rejection of Claims 16 and 17 under 35 U.S.C. 102(b) as being anticipated by Marchal et al. (Marchal)(FR 1,273,897) is withdrawn.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 6, 7, 13, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarvik (US 5,507,629) and Miyamoto et al. (Miyamoto)(JP 55-36635). Jarvik teaches a blood pump with a motor and mechanical and passive repulsive, magnetic bearings. Jarvik teaches a single magnet on the rotor and stator which are radially aligned. Jarvik does not teach a second stator magnet which is axially aligned

with the first stator magnet. Miyamoto teaches a second stator magnet which is axially aligned with the first stator magnet. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the bearing of Jarvik with additional magnet of Miyamoto to improve the spring constant of the magnetic bearings.

7. Claims 1, 6, 7, 12, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokono (JP 62-95952) and Miyamoto et al. (Miyamoto)(JP 55-36635). Yokono teaches a generator with mechanical and passive repulsive, magnetic bearings. Yokono teaches a plurality of magnets on the stator and rotor. Miyamoto teaches a first and second stator magnets which are axially aligned with the rotor magnet positioned within one of the stator magnets. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Yokono with two stator magnets and one rotor magnet of Miyamoto to provide a magnetic bearing with improved the spring constant.

8. Claims 16, 19, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchal et al. (Marchal)(FR 1,273,897) and Wampler (US 5,840,070). Marchal teaches a mechanical and magnetic bearing with a upper and lower magnetic bearings with one ring magnetic on the stator and two on the shaft (see figure 6), and a sleeve bearing 2a,b. Marchal teaches every aspect of the invention except upper magnetic bearing being an inner and outer repulsive magnetic bearing. Wampler teaches the upper bearing 21 being inner and outer repulsive magnetic

bearing with the inner and outer bearings being radially aligned. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the bearing of Marchal with the upper bearings of Wampler to provide passive bearings for a less expensive blood pump.

9. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marchal et al. (Marchal)(FR 1,273,897) and Wampler (US 5,840,070). Marchal teaches every aspect of the invention except inner and outer magnetic diameters being substantially aligned. Wampler shows the inner and outer magnets being substantially aligned, see figure 11. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the bearing of Marchal with the upper bearings of Wampler to provide passive bearings for a less expensive blood pump.

10. The prior art rejections of the prior office action under 35 USC 103 are withdrawn.

Response to Arguments

11. The Applicant's argument filed 4/3/03 have been considered but are not persuasive. The Applicant's argument that the inclusion of reference number 24 to the drawings is sufficient to show the magnets 51, 52, 521, and 511 mounted on the base. The examiner disagrees. Figure 3 is poorly drawn with incomplete lines adjacent the north pole of magnet 51 and at south pole of magnet 511. Particularly there is a line from the south pole to the shaft at magnet 511. It is unclear what this line is and there is

no line on the opposite side of the shaft, such that is unclear how the magnet 511 is connected to the base.

The Applicant's argument Jarvic teaches a single magnet on the stator and rotor is not persuasive because the rejection is made over the combined teaches of Jarvic and Miyamoto. The Applicant's that Jarvic does not teach any bearings for supporting the shaft is not persuasive. Jarvic teaches bearings 40 at the tip of the rotor shaft, or in the alternative at both ends of the shaft see col. 3, line 40. The Applicant's argument that Jarvic teaches different fields and modes of operation is not persuasive because the fields and modes of operation are not claimed. The Applicant's argument that the rejection is not obvious over Jarvic and Miyamoto is not persuasive because each and every limitation of the claim is properly rejected above, including the upper and lower bearings to axially and radially reclusively position the rotor which is shown in Jarvic.

The Applicant's argument that Yokono and Miyamoto do not teach the combination of a magnetic bearing and a mechanical bearing is not persuasive. Yokono teaches the seal 10 which is inherently a bearing because it provides contact between the rotor and stator. The Applicant's argument that Marchal is not in the same field of endeavor as Wampler is not persuasive because they both belong to the field of magnetic bearings and because the fields are not claimed. The examiner notes that the intended use does not structurally differentiate the invention from the prior art.

The Applicant's argument regarding the magnetic bearings providing radial and axial bearings is not persuasive because it is inherent in the structure of Marchal. Yokono is only used to show the combination with radially inner and outer bearings.

Conclusion

12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. The facsimile number for the Group is (703) 305-3432.

Application/Control Number: 09/709,794
Art Unit: 2834

Page 8

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
June 7, 2003

A handwritten signature in black ink, appearing to read 'Karl Tamai', with a long, sweeping horizontal line extending to the right.

KARL TAMAI
PRIMARY EXAMINER